CLAIMS

What is claimed is:

1   1.   A method for performing a database operation, comprising the computer-
2   implemented steps of:
3   receiving a database query that specifies an operation for manipulating data;
4   in response to receiving said database query, performing the steps of,
5   retrieving data from a relational structure;
6   storing the data in a non-relational structure that can be addressed as a
7   multi-dimensional array; and
8   performing said operation specified in the database query on said data.

1   2.   The method of Claim 1, wherein the step of storing the data in a structure
2   comprises the step of storing the data in a structure that can be symbolically
3   addressed as an n-dimensional array.

1   3.   The method of Claim 1, further comprising the step of presenting in tabular format
2   results from performing said operation.

1   4.   The method of Claim 1, wherein the step of performing said operation comprises
2   the step of automatically reordering the specified operations to allow the operation
3   to be correctly performed on said data stored in said non-relational structure.

1   5.   The method of Claim 1, wherein the step of performing said operation comprises
2   the step of aggregating over a set of data information contained in multiple cells of
3   said non-relational structure.

1   6.   The method of Claim 1, wherein the step of performing said operation comprises
2   the step of repeatedly performing a series of manipulations on said data until a
3   particular criterion is satisfied.

1   7.   A method for processing database query operations, comprising the computer-
2   implemented steps of:
3   in response to receiving a database query that specifies an operation for
4   manipulating data, performing the steps of,
5   referencing data in a relational structure as if the data was stored in a
6   multi-dimensional array;
7   retrieving the data from said relational structure; and
8   performing said operation previously specified in said database query.

1   8.   The method of Claim 7, wherein:
2   the step of receiving a database query that specifies an operation comprises the
3   step of receiving a multi-dimensional array operation; and
4   the step of referencing data in a relational structure comprises the step of
5   referencing said data using said multi-dimensional array operation.

1   9.   The method of Claim 7, wherein the step of retrieving the data comprises the step
2   of retrieving the data from one or more relational database tables.

1   10.   The method of Claim 7, further comprising the step of storing said data in a non-
2   relational structure; and
3   wherein the step of performing said operation comprises the step of performing
4   said operation in reference to said data stored in said non-relational
5   structure.

1   11.   The method of Claim 7, wherein the step of performing said operation comprises
2   the step of repeatedly performing a series of manipulations on said data until a
3   particular criteria is satisfied.

1   12.   A method for processing database query operations, comprising the computer-

2   implemented steps of:

3   in response to receiving a database query that specifies an operation for

4   manipulating data, performing the steps of,

5   retrieving a first set of data from a first relational structure;

6   storing the first set of data in a non-relational structure; and

7   manipulating the first set of data by performing the operation previously

8   specified in the database query.

1   13.   The method of Claim 12, wherein the step of retrieving a first set of data from a

2   first relational structure comprises the step of retrieving said first set of data from

3   a relational database.

1   14.   The method of Claim 13, wherein the step of retrieving said first set of data from a

2   relational database comprises the step of retrieving said first set of data from one

3   or more tables within said a relational database.

1   15.   The method of Claim 12, wherein the step of storing the first set of data in a non-

2   relational structure comprises the step of storing the first set of data within a

3   spreadsheet application.

1   16.   The method of Claim 12, wherein the step of storing the first set of data in a non-

2   relational structure comprises the step of storing the first set of data in a non-

3   relational database application.

1   17.   The method of Claim 12, wherein the step of storing the first set of data in a non-

2   relational structure comprises the step of storing the first set of data within an n-

3   dimensional array data structure.

1 18. The method of Claim 12, wherein the step of manipulating the first set of data
2 comprises the steps of symbolically addressing the first set of data as n-
3 dimensional array information.

1 19. The method of Claim 12, further comprising the step of, after performing the step
2 of manipulating the first set of data, storing in a second relational structure, result
3 information based on performance of said operation.

1 20. The method of Claim 12, wherein the step of manipulating the first set of data
2 comprises the step of repeatedly performing a series of manipulations on said first
3 set of data until a particular criteria is satisfied.

1 21. A computer-readable medium carrying one or more sequences of instructions for
2 performing a database operation, wherein execution of the one or more sequences
3 of instructions by one or more processors causes the one or more processors to
4 perform the steps of:
5 receiving a database query that specifies an operation for manipulating data;
6 in response to receiving said database query, performing the steps of,
7 retrieving data from a relational structure;
8 storing the data in a non-relational structure that can be addressed as a
9 multi-dimensional array; and
10 performing said operation specified in the database query on said data.

1 22. The computer-readable medium of Claim 21, wherein the step of storing the data
2 in a structure comprises the step of storing the data in a structure that can be
3 symbolically addressed as an n-dimensional array.

1   23.   The computer-readable medium of Claim 21, further comprising instructions for
2   performing the step of presenting in tabular format results from performing said
3   operation.

1   24.   The computer-readable medium of Claim 21, wherein the step of performing said
2   operation comprises the step of automatically reordering the specified operations
3   to allow the operation to be correctly performed on said data stored in said non-
4   relational structure.

1   25.   The computer-readable medium of Claim 21, wherein the step of performing said
2   operation comprises the step of aggregating over a set of data information
3   contained in multiple cells of said non-relational structure.

1   26.   The computer-readable medium of Claim 21, wherein the step of performing said
2   operation comprises the step of repeatedly performing a series of manipulations on
3   said data until a particular criterion is satisfied.

1   27.   A computer-readable medium carrying one or more sequences of instructions for
2   processing database query operations, wherein execution of the one or more
3   sequences of instructions by one or more processors causes the one or more
4   processors to perform the steps of:
5   in response to receiving a database query that specifies an operation for
6   manipulating data, performing the steps of,
7   referencing data in a relational structure as if the data was stored in a
8   multi-dimensional array;
9   retrieving the data from said relational structure; and
10   performing said operation previously specified in said database query.

1   28.   The computer-readable medium of Claim 27, wherein:
2   the step of receiving a database query that specifies an operation comprises the
3   step of receiving a multi-dimensional array operation; and
4   the step of referencing data in a relational structure comprises the step of
5   referencing said data using said multi-dimensional array operation.

1   29.   The computer-readable medium of Claim 27, wherein the step of retrieving the
2   data comprises the step of retrieving the data from one or more relational database
3   tables.

1   30.   The computer-readable medium of Claim 27, further comprising instructions for
2   performing the step of storing said data in a non-relational structure; and
3   wherein the step of performing said operation comprises the step of performing
4   said operation in reference to said data stored in said non-relational
5   structure.

1   31.   The computer-readable medium of Claim 27, wherein the step of performing said
2   operation comprises the step of repeatedly performing a series of manipulations on
3   said data until a particular criteria is satisfied.

1   32.   A computer-readable medium carrying one or more sequences of instructions for
2   processing database query operations, wherein execution of the one or more
3   sequences of instructions by one or more processors causes the one or more
4   processors to perform the steps of:
5   in response to receiving a database query that specifies an operation for
6   manipulating data, performing the steps of,
7   retrieving a first set of data from a first relational structure;
8   storing the first set of data in a non-relational structure; and
9   manipulating the first set of data by performing the operation previously
10   specified in the database query.

1   33.   The computer-readable medium of Claim 32, wherein the step of retrieving a first
2   set of data from a first relational structure comprises the step of retrieving said
3   first set of data from a relational database.

1   34.   The computer-readable medium of Claim 33, wherein the step of retrieving said
2   first set of data from a relational database comprises the step of retrieving said first
3   set of data from one or more tables within said a relational database.

1   35.   The computer-readable medium of Claim 32, wherein the step of storing the first
2   set of data in a non-relational structure comprises the step of storing the first set of
3   data within a spreadsheet application.

1   36.   The computer-readable medium of Claim 32, wherein the step of storing the first
2   set of data in a non-relational structure comprises the step of storing the first set of
3   data in a non-relational database application.

1   37.   The computer-readable medium of Claim 32, wherein the step of storing the first
2   set of data in a non-relational structure comprises the step of storing the first set of
3   data within an n-dimensional array data structure.

1   38.   The computer-readable medium of Claim 32, wherein the step of manipulating the
2   first set of data comprises the steps of symbolically addressing the first set of data
3   as n-dimensional array information.

1   39.   The computer-readable medium of Claim 32, further comprising instructions for
2   performing the step of, after performing the step of manipulating the first set of
3   data, storing in a second relational structure, result information based on
4   performance of said operation.

1   40.   The computer-readable medium of Claim 32, wherein the step of
2   manipulating the first set of data comprises the step of repeatedly
3   performing a series of manipulations on said first set of data until a
4   particular criteria is satisfied.